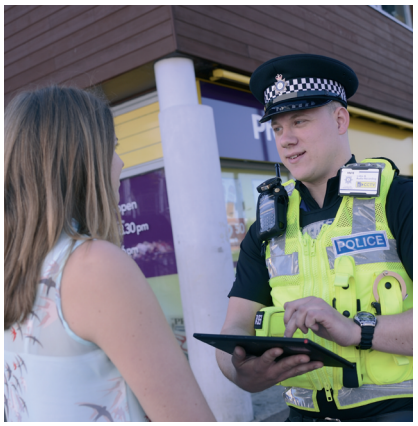
CASE STUDY
Intel® Core™ i5 Processor
Intel® Atom™ Processor
Mobile Computing
Government/Public Sector

Look Inside.™

Connecting Cambridgeshire Constabulary

A new app and Lenovo* tablets with Intel® processors help police more efficiently and improve public safety



Creating a safer **Cambridgeshire**

Intel worked with independent software vendor Black Marble to deliver a mobile computing solution for Cambridgeshire Constabulary. The solution pulls together multiple systems into one user interface that is accessible through smartphones and tablet devices powered by Intel® processors. The project supports innovation in the public sector and enables better services for the community and greater efficiency, minimizing expenses for taxpayers.

Challenges

- **Administrative burden.** Like all police forces, Cambridgeshire Constabulary's officers depended on paper-based notes that created an inefficient administrative burden and siloed important information
- **Protecting public safety.** Facing budget constraints, Cambridgeshire Constabulary wanted to make better use of officers' time to reassure the public and protect their safety
- **Integrity of evidence.** Cambridgeshire Constabulary wanted a way to ensure and demonstrate the integrity of all notes officers take at the scene of a crime which could later be used as evidence

Solution

- **Custom application.** Cambridgeshire worked with independent software developer Black Marble to develop a mobile application that enables officers to access all relevant data systems from a single point
- **Intel® technology-powered tablets.** Cambridgeshire Constabulary deployed the application on Lenovo* tablet devices powered by Intel® Core™ i5 and Atom™ processors to create a cryptographically secure electronic notebook for each officer
- **Standardized IT environment.** The tablets run on Microsoft Windows* 8.1, in line with Cambridgeshire's strategy to standardize its IT, and are compatible with existing x86 applications and peripherals deployed across the force

Technology Impact

- **Processor performance.** Cambridgeshire's police officers can use geo-location data, streaming video and a number of other performance-hungry features to enhance the accuracy and integrity of note-taking
- **Security and manageability.** Built-in security and manageability features help safeguard data, user identities, privacy, and network access, making the devices particularly suitable for police work
- **Sharing data.** Officers can print wirelessly; share data via USB ports, Wi-Fi or 4G; and connect to existing peripherals such as keyboards and cameras

Business Impact

- **Efficiency for taxpayers.** Cambridgeshire Constabulary's estimates show that simply mobilizing the desktop for police officers in the field or on patrol has already saved, on average, an hour a day per officer
- **Reduced administration.** Internal assessments show that officers spend significantly less time on administrative tasks
- **Improved public safety.** Cambridgeshire can develop a more fluid, connected, and collaborative service that is cost-efficient and helps improve public safety

Performance, security and reliability to mobilize police data and connect police officers

"Our mobile solution included the use of geo-location data, streaming video, and a number of other performance-hungry features. We needed a tablet with strong processor performance and good battery life as well as security and manageability features, so we selected high-performing tablet devices powered by Intel® processors."

Jonathan Black
Head of ICT service delivery
Cambridgeshire Constabulary

Technology and policing in the 21st century

With its mix of rural and urban communities, the close proximity of the very wealthy with the socially deprived, and one of the UK's fastest-growing populations, the county of Cambridgeshire presents a series of complex policing challenges. Cambridgeshire Constabulary is a force of around 1,400 officers and 200 police community support officers. Responsible for an area of approximately 3,500 km^2 and a population of 0.7 million, it is also one of the most dynamic, forward-thinking, and efficient police organizations in the country.

Like other police forces, Cambridgeshire Constabulary works with a number of local and national computing systems. These include command and control, custody, and investigation management systems, the Police National Computer and closed-circuit TV (CCTV) footage.

In contrast, day-to-day policing is very paper-intensive. Officers take notes in the same way they always have: using small pocket notebooks to write down vital details, observations, and sketches. Later, they manually enter the notes into computer systems back at the police station.

Detective Superintendent Andy Gipp, business implementation lead at Cambridgeshire Constabulary, says, "The details that police officers take on the street are a vital component of policing. They are often the first piece of evidence that is recorded at a crime scene. They are relied on during a prosecution or enquiry and reassure the public that we are taking their concerns seriously. But there are obvious problems that arise from the traditional paper-and-pencil method, and in the 21st century we can certainly do better."

Paper, processes, and public sector budgets

The problems fall into three broad categories. First, they are inefficient. Officers lose a significant amount of time traveling between the street and the station to duplicate essential administrative tasks. Second, they are inaccurate. As with all manual processes, rekeying data duplicates effort and is prone to errors. For policing, this is particularly problematic because the integrity of the data is essential if criminal prosecutions or even internal enquiries are to succeed. Finally, paper-based note-taking helps perpetuate silos of information across the force. This not only slows down major investigations, it also prevents the police from serving the public to their fullest capability. "For example, one of our traffic officers might stop a driver for a broken tail light," says Gipp. "That driver may have made a complaint about anti-social behavior the week before. But with no access to that information, the officer isn't aware and can't update the driver on progress. It remains a disjointed service."

While facing these operational challenges, Cambridgeshire Constabulary, like all public services in the UK, was also facing strict budgetary constraints. As Gipp explains, "We have to preserve the front line: it's what the public demands and has a right to expect. Increasing back-office services while reducing the number of officers is simply not an option. We needed a much smarter way of policing our county."

Technology vision for today's police force

Jonathan Black, Cambridgeshire's head of information and communications technology (ICT) service delivery, explains the organization's vision for ICT: "On a technical level, it's all about having standardized systems so that we can maximize the investment in our IT assets. We decided to standardize on a Microsoft environment for that reason. On an operational level, it's about delivering more fluid and efficient policing with accurate, connected data."

Providing officers with mobile access to the systems they use every day was seen as a logical part of the overall ICT strategy. First, the project looked at devices to mobilize the officers' desktops. Although the type of device was key to the project's success, the project team soon saw that a new application would be needed.

This was partly because many of the legacy applications used in policing were not designed for mobile. It was also clear that adding a single application for stop and search, another for ticket issuance, and another for briefing and

tasking, for example, would not achieve the project's goals of achieving more connected policing and making life easier for officers on the street.

Security, performance and manageability

When Cambridgeshire Police discussed its requirements with independent software vendor Black Marble, they suggested and then developed a solution that went beyond mobilizing the desktop. Known as tuServ*, the new solution has wide-reaching applications. The first to go live is a cryptographically secure electronic notebook that allows police officers to enter and store their notes digitally using a tablet or 2 in 1 device. Officers can take photos, for example, of an accident, a victim's injury, or a whole crime scene. They can record conversations with witnesses and victims or take video of a search of a house, a car, or a stop search on the street.

Further capabilities are also in development. This includes the ability to share information between officers when they are in attendance and contributing to a particular event, and to integrate information with other operational policing systems. Location-aware services for managing incidents and performing briefings are also in the application's development roadmap. Officers will be able to access relevant police databases and systems with a single search.

Black explains the next steps in the project: "Our mobile solution included the use of geolocation data, streaming video, and a number of other performance-hungry features. So we needed a tablet with strong processor performance and good battery life as well as security and manageability features. That's why we selected high-performing tablet devices powered by Intel processors."

The first device selected was the Lenovo Thinkpad* 2 powered by the Intel® Atom™ processor Z2760. Since then, the force has added the Lenovo Thinkpad 10 powered by Intel Atom processor Z3795, and the Lenovo S100 Yoga*, powered by the Intel® Core™ i5 processor.

These lightweight devices deliver a range of performance options that are powerful enough to run multiple apps simultaneously, while still providing longer battery life to help officers get more done each day. They are also robust enough to withstand the wear and tear of daily policing. They allow officers to print wirelessly, share data via USB ports, and connect to existing peripherals such as keyboards and cameras. They also offer a variety of built-in security and manageability features designed to help safeguard data, user identities, and privacy and network access.

Since the devices run on Windows 8.1, they are aligned with Cambridgeshire's standardization strategy and compatible with the existing x86 applications and peripherals widely deployed across the force.

Technology in action

As part of Cambridgeshire's plans for using technology to deliver more efficient and joined-up policing, each officer will be equipped with a tablet device and a smartphone, according to the demands of his or her role. In the initial phase of deployment, devices are being rolled out to officers in Bedfordshire, Cambridgeshire and Hertfordshire along with the tuServ application.

The immediate effect of the new devices and the tuServ application is that officers no longer need to return to their station to perform routine tasks. Gipp points out, "Even before we had done anything very innovative with tuServ, our internal monitoring showed that mobilizing the desktop for police officers out in the field or on patrol has already saved, on average, an hour a day per officer."

The combination of the tuServ app and the powerful mobile devices is set to transform policing in Cambridgeshire. Officers will be able to use the devices to check information whenever they need to. For example, when pulling over a speeding car, the officer can check the car's license plate, history, and ownership—all in the time it takes to get out of his patrol car and walk to the stopped vehicle. An on-the-spot search of the Police National Computer will help the officer identify whether the vehicle is stolen, or driven by someone other than the registered owner and react accordingly.

Lessons Learned

The implementation of the tuServ* project shows the importance of having senior management on board to drive any IT program through to completion. From the outset, the vision and drive have come from Cambridgeshire's chief constable, Simon Parr.

The second lesson has been the benefits of an agile approach to development and implementation. In a move away from traditional policing procurement exercises, the tuServ project has the in-built flexibility that allows Cambridgeshire Constabulary to evolve its requirements as policy, legislation, and the overall policing environment change. It ensured that the core application and hardware still met the needs of the force at the time of deployment – and not just at the time of procurement.

Collaboration is also easier. Often, several officers may need to work on one incident even though they're not in the same place at the same time. Using the app on their mobile devices, each team member can share updates and new information with colleagues in real time, speeding time to resolution.

Officers can also establish links between individual cases much more quickly. As Gipp explains, "This is a powerful solution that enables officers to search other notebooks throughout the entire force. It helps officers find and retrieve information that could be pertinent to their case. For example, two officers, 40 miles apart, might be interested in the same individual. Before, they wouldn't necessarily be aware of each other's work. Now by searching for the name of their suspect, they get instant access to their colleague's information."

Cambridgeshire also plans to use tuServ to make tactical briefings more efficient. Currently, if a drugs raid is planned for a certain time and place, then all officers need to be given a general briefing to ensure the safety of those in the vicinity. In the future it will be possible to identify the specific officers in the direct vicinity of the raid just before it's carried out.

Gipp continues, "This is a huge step forward for policing. In the past, officers with a broad range of responsibilities have not always had access to the right information at the right time to do the right thing. With the app running on the tablet devices, we are enabling more objective decision-making. On one hand, officers have immediate access to information they need to act on their initiative. On the other, it prevents repeated or unnecessary searches."

Integrity, trust, and public safety

Robert Hogg, managing director of Black Marble, sums up the success of the project: "Innovations in hardware provide exciting new opportunities that software can exploit to enable technological innovation. tuServ is a shining example of what is possible when hardware and software perfectly complement one another."

The development of tuServ offers Cambridgeshire Constabulary clear and obvious cost- and time-saving benefits. Officers will spend significantly less time logging into and out of multiple applications, which will allow them to be more efficient and productive with their time.

But it is in the area of public safety that Gipp, Black, and their colleagues are most interested. "Certainly, fewer officers in the office and more on the street is a more efficient policing model," says Gipp. "But it's also a more effective one. Giving officers access to connected mobile data means when making decisions that affect the public, they can act on better information, more quickly and accurately."

The solution also supports greater levels of data integrity, which in the long term can only increase confidence in the police service. "Everything we do is recorded in the back-end system. Everything is time-stamped. Everything is geo-located. It creates a more accountable environment where our actions are identified and justified and the evidence we provide stands up to the highest level of scrutiny. That increases trust in police actions and inspires greater public confidence in the police force as a whole."

Find the solution that's right for your organization. View **success stories from your peers**, learn more about **tablets for business** and check out the **IT Center**, Intel's resource for the IT Industry.

This document and the information given are for the convenience of Intel's customer base and are provided "AS IS" WITH NO WARRANTIES WHATSOEVER, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NONINFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS. Receipt or possession of this document does not grant any license to any of the intellectual property described, displayed, or contained herein. Intel® products are not intended for use in medical, lifesaving, life-sustaining, critical control, or safety systems, or in nuclear facility applications.

Intel does not control or audit the design or implementation of third party benchmark data or Web sites referenced in this document. Intel encourages all of its customers to visit the referenced Web sites or others where similar performance benchmark data are reported and confirm whether the referenced benchmark data are accurate and reflect performance of systems available for purchase.

Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. For more information go to http://www.intel.com/performance.

No computer system can provide absolute security under all conditions. Built-in security features available on select Intel® Core™ processors may require additional software, hardware, services, and/or an Internet connection. Results may vary depending upon configuration. Consult your system manufacturer for more details. For more information visit www.intel.com/technology/security.

Copyright © 2014, Intel Corporation. All rights reserved. Intel, the Intel logo, Intel Atom, Intel Core and Intel Inside, are trademarks of Intel Corporation in the U.S. and/or other countries.

*Other names and brands may be claimed as the property of others.

1214/JNW/RLC/XX/PDF 331723-001EN